REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-42 are pending. Claims 1, 25, 41, and 42 are amended. Support for the amendments to Claims 1, 25, 41, and 42 can be found at page 11, line 16 – page 12, line 1; page 13, lines 1-5; page 14, lines 15-25; and page 26, line 22 – page 27, line 17, for example. No new matter is added.

In the outstanding Office Action, Claims 1, 25, 41, and 42 were rejected under 35 U.S.C. § 103(a) as obvious over Midgley (U.S. Patent No. RE 35,751, herein "Midgley"). Claims 2-4, 7, 8, 10-12, 18, 19, 22, 26-28, 31, 34, 35, and 38 were rejected under 35 U.S.C. § 103(a) as obvious over Midgley in view of Kawano et al. (U.S. Patent No. 5,012,286, herein "Kawano"). Claims 5, 6, 9, 13, 14, 16, 17, 20, 21, 23, 24, 29, 30, 32, 33, 36, 37, 39, and 40 were rejected under 35 U.S.C. § 103(a) as obvious over Midgley in view of Kawano and further in view of Samuels (U.S. Patent No. 5,937,225, herein "Samuels").

Regarding the rejection of Claims 1, 25, 41, and 42, as obvious over Midgley, that rejection is respectfully traversed by the present response.

The outstanding Office Action states that because the control unit (100) of Midgley calculates a new current image count for the cartridges, the control unit (100) inherently stores the new current image count somewhere in the image forming apparatus.[1] As discussed in the previous response, the control unit (100) in the apparatus merely collects the number of prints made in a given run from RAM (103) and adds this number to the cumulative number of prints stored in the cartridge (12, 14, 16).

[1] Outstanding Office Action at 2.

Independent Claim 1 is amended to characterize the duration in which the cumulative number of prints printed by the replaceable part is stored in the storing means built in the apparatus body.

Amended Claim 1 recites, in part:

> control means for storing a limit number of prints particular to the replaceable part in said first nonvolatile storing means, storing, after an image forming operation, a cumulative number of prints printed by said replaceable part in said storing means at least until the replaceable part is replaced with a different replaceable part and in said second nonvolatile storing means, and reporting a time for replacing said replaceable part when said cumulative number stored in said storing means exceeds said limit number of prints stored in said first nonvolatile storing means.

Accordingly, the control means stores a cumulative number of prints printed by the replaceable part in the storing means of the body at least until the replaceable part is replaced with a different replaceable part.

In contrast, Midgley describes RAM (103) that stores the number of prints printed during a given print run. The controller (100) adds that number to the cumulative number of prints stored in the memory (90) of the toner cartridge (12, 14, 16) and then updates the cumulative number of prints stored in the memory (90). Midgley states:

> On a print request, machine 10 cycles up and commences to make prints. Control unit 100 counts each time a finished print is detected by print sensor 85 as the finished print passes from fixing station 80 into output tray 86. When the print run is completed and the machine cycles down, the total number of images made during the run, i.e., the image run count, is temporarily stored in RAM 103. Control unit 100 fetches the current image count from the memory 90 of each cartridge 12, 14, 16 and, using the image run count from RAM 103, calculates a new current image count for each memory 90 reflecting the number of images remaining on the cartridge. Control unit 100 then writes the new current image count back into the individual memories 90 of each cartridge 12, 14, 16. This new count is then verified to insure accuracy.[2]

[2] Midgley, col. 6, lines 23-37.

Accordingly, the control unit (100) makes an instantaneous calculation using data from RAM (103) and memory (90). The control unit (100) then writes the result of the calculation into the individual memories (90) of each cartridge (12, 14, 16).

Midgley also describes that the control unit (100) will disable operation of the machine (10) when the result of the calculation performed by the control unit (100) is greater than a predetermined number stored in the cartridge. Midgley states:

> The new current image count for each cartridge is also compared with the termination count, exemplified here by zero. Where the current image count is equal to or less than zero for a cartridge, the cartridge is disabled and the message (END OF LIFE) for the cartridge is displayed in the message display window 88. Control unit 100 prevents further operation of machine 10 until the expired cartridge is replaced by a fresh cartridge.

Accordingly, the control unit (100) performs a comparison between a predetermined termination count and the image count calculated based on the image **run** count temporarily stored in RAM (103) and the count stored in memory (90) of the cartridge. Based on the result of that comparison, the control unit (100) prevents further operation of the machine (10). The control unit (100) does not keep a cumulative number of prints printed by a cartridge for any length of time, much less store that information until the cartridge is replaced as recited in amended Claim 1. Accordingly, Applicants respectfully submit that amended Claim 1 patentably distinguishes over Midgley for at least the reasons discussed above.

As independent Claims 25, 41, and 42 recite substantially similar features to those discussed above regarding the rejection of Claim 1, Applicants respectfully submit that amended Claims 25, 41, and 42 patentably distinguish over Midgley for at least the same reasons as amended independent Claim 1.

Applicants further respectfully submit that none of the cited references asserted in combination with Midgley against dependent claims remedies the deficiencies of Midgley discussed above.

Kawano describes a printer with a device for detecting the concentration of developing agent inside a toner cartridge. The cartridge itself has no memory that stores any number related to printed pages. Rather, all the memory described in Kawano is located in the printer body. As the printer cartridge itself cannot store the number of sheets it has processed, any use of the printer cartridge in a second printer results in a discrepancy between the information stored in each of the printers and the true number of prints processed by the printer cartridge. In other words any memory in the printer described in Kawano will store only the number of prints made by the printer cartridge while in that particular printer. The memory in the printer will not take into account the number of prints made with the printer cartridge in a second printer. Thus, the memory in the printer described in Kawano will not store the cumulative number of prints printed by a particular printer cartridge. Accordingly, Applicants respectfully submit that Kawano suffers from the same deficiency as discussed above regarding Midgley.

Regarding Samuels, this reference describes a method of monitoring toner use in a printer cartridge by counting pixels printed by the cartridge, not prints. No where in Samuels is any memory for counting the number of printed pages produced by the cartridge disclosed.

Accordingly, Applicants respectfully submit that amended independent Claims 1, 25, 41, and 42 as well as Claims 2-24 and 26-40 depending therefrom patentably distinguish over the cited references for at least the reasons discussed above.

Consequently, in light of the above discussion and in view of the present amendments, the present application is believed to be in condition for allowance, and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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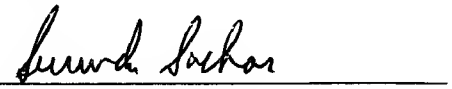

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